



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,063	02/11/2004	Takashi Sato	Q79869	3316
23373	7590	04/05/2007	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			MILLER, MICHAEL G	
			ART UNIT	PAPER NUMBER
			1709	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	04/05/2007	PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/775,063	Applicant(s) SATO ET AL.
Examiner	Art Unit Michael G. Miller	1709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 11 February 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-5 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-5 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 11 FEB 2004 is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11 FEB 2004.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_ .

**DETAILED ACTION**

**1. *Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 and 5 rejected under 35 U.S.C. 102(b) as being anticipated by

Sakaguchi et al (U.S. PGPub 2002/0064606, hereinafter '606).

4. With specific regard to Claim 1, '606 teaches a method of producing a magnetic disk, comprising:

a. Forming at least a magnetic layer (32) on a disk substrate (S) (Figure 2).

b. Thereafter forming a carbon-based protection layer (33) by plasma CVD (paragraphs 0218 - 0220, Figure 1)

i. (b) performed using a mixed gas of a hydrocarbon-based gas and a nitrogen gas without containing an inactive gas (paragraphs 0237 – 0239).

ii. (b) performed under the condition that the disk substrate with the magnetic layer formed thereon is kept at 250°C (paragraphs 0166 – 0168).

5. With specific regard to Claim 2, which contains all the limitations of Claim 1 as listed above, '606 teaches the method of Claim 1 wherein:

a. The mixed gas is a mixture of a low-molecular weight straight-chain hydrocarbon-based gas (paragraph 0094 for definition of low-molecular-weight, paragraph 0237 for description of mixture, paragraph 0238 for listing of allowable hydrocarbons which include Applicant's selection) and a nitrogen gas (paragraph 0237).

6. With specific regard to Claim 5, which contains all the limitations of Claim 1 as listed above, '606 teaches the method of Claim 1 wherein:

- a. The magnetic disk is for use in a magnetic disk apparatus of a load/unload system. Examiner takes the position that:
  - i. The method of '606 anticipates the method of Applicant.
  - ii. The product resulting from the method of '606 fulfills the limitation of Claim 5 because it is capable of being used in a load/unload system.

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-4 rejected under 35 U.S.C. 103(a) as being unpatentable over '606 as applied to claims 1-2 above, and further in view of Suzuki et al. (U.S. Patent 6,680,112, hereinafter '112).

9. With specific regard to Claim 3, which contains all the limitations of Claim 1, '606 teaches the method of Claim 1 in its entirety. '606 also teaches a lubricating film wherein the upper surface of said film reduces surface friction (Paragraphs 0513-0517). '606 does not teach the limitation of Claim 3, which specifies that the method of Claim 1 further comprises exposing the carbon-based protective layer to nitrogen plasma after forming the carbon-based protection layer. '112 teaches that using an etching gas, wherein nitrogen is explicitly cited as a valid example among other gases that can generate a plasma (Column 5 Lines 16-29), allows for controlling the affinity of the DLC film to a lubricant film (Column 4 Lines 21-45, 50-56), promoting adhesion of the lubricant film to the DLC film. Examiner takes the position that the invention of Claim 3 is suitable for use in a CSS system. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied the plasma-etching step of '112 to the selected method of '606 because '606 teaches a lubricating film, '112 teaches a method to improve the affinity between the lubricating film and the DLC film, and the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness.

10. With specific regard to Claim 4, which contains all the limitations of Claim 3 as listed above, '606 and '112 teach all the limitations of Claims 1 and 3. '606 further

teaches forming a lubrication layer after exposing the carbon-based protection layer to nitrogen plasma (paragraph 0247).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsuo et al (U.S. Patent 5,837,357), Veerasamy et al (U.S. Patent 5,858,477) and Sasaki et al (U.S. Patent 6,455,101) are all documents detailing information relevant to the manufacture of carbon protective layers and/or magnetic recording media.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael G. Miller whose telephone number is (571) 270-1861. The examiner can normally be reached on Monday – Thursday from 7:30 – 5:00 and Friday from 7:30 – 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MGM *MGM*

*MICHAEL B. CLEVELAND*  
MICHAEL B. CLEVELAND  
SUPERVISORY PATENT EXAMINER